

WHAT IS CLAIMED IS:

1. A sound-correction system in the audio apparatus installed in a vehicle, comprising:

a music-adjustment device which corrects the sound; and

5       a noise-information-detection device which detects noise information; and wherein said music-adjustment device corrects the sound according to the noise level detected by said noise-information-detection device.

10       2. The sound-correction system of claim 1 wherein  
          said noise-information-detection device comprises an extraction device which extracts low-frequency-noise level that occurs from the vehicle; and wherein  
          said music-adjustment device corrects the sound based  
15      on said detected low-frequency-noise level.

20       3. The sound-correction system of claim 1 wherein  
          said noise-information-detection device comprises a first detection device which detects the vehicle speed; and  
          wherein  
          said music-adjustment device corrects the sound based  
25      on said detected vehicle speed.

25       4. The sound-correction system of claim 1 wherein  
          said noise-information detection device comprises a second detection device which detects opened/closed information of an opening/closing mechanism of the vehicle;

and wherein

    said music-adjustment device corrects the sound based  
on said detected opened/closed information.

5       5. The sound-correction system of claim 1 wherein  
          said noise-information-detection device comprises a  
third-detection device which detects the music level; and  
wherein

10      said music-adjustment device corrects the sound based  
on said detected music level.

6. The sound-correction system of claim 1 wherein  
    said music-adjustment device comprises: a  
low-frequency-correction device which corrects  
15 low-frequency sound, a high-frequency-correction device  
which corrects high-frequency sound, and a  
full-range-correction device which corrects full-range sound.

7. The sound-correction system of claim 6 wherein  
20      said low-frequency-correction device corrects the sound  
based on the low-frequency noise detected by said extraction  
device.

8. The sound-correction system of claim 6 wherein  
25      said high-frequency-correction device corrects the sound  
based on the vehicle speed detected by said first detection  
device, and the opened/closed information detected by said

second detection device.

9. The sound-correction system of claim 6 wherein  
said full-range correction device corrects the sound  
5 based on the vehicle speed detected by said first detection  
device, and the opened/closed information detected by said  
second detection device.

10. A recording medium which is readable by a computer  
10 included in a sound-correction system of an audio apparatus  
installed in a vehicle, and on which a sound-correction program  
is recorded, wherein the program causes the computer to  
function as

15 a music-adjustment device which corrects the sound; and  
as

a noise-information-detection device which detects noise  
information; and wherein

20 said music-adjustment device corrects the sound according  
to the noise level detected by said  
noise-information-detection device.

11. A sound-correction method in the audio apparatus  
installed in a vehicle comprising:

25 a music-adjustment process of correcting the sound; and  
a noise-information-detection process for detecting  
noise information; and wherein

said music-adjustment process corrects the sound

according to the noise level detected by said noise-information-detection process.

12. A sound-correction apparatus in the audio apparatus  
5 installed in a vehicle comprising:

an adjustment device adjusting the sound-volume in the full frequency range of the reproduced signal;

a low-frequency-correction device which corrects the sound in the low-frequency range;

10 a high-frequency-correction device which corrects sound in the high-frequency range;

an extraction device that extracts the low-frequency component below the audible frequency;

a first detection device that detects the vehicle speed;

15 a second detection device that detects the opened/closed status of the opening/closing function in the vehicle;

a third detection device which detects the amount of adjustment by said adjustment device;

20 a first calculation device that calculates the amount of low-frequency correction that is corrected by said low-frequency-correction device according to the ratio of said low-frequency component extracted by said extraction device, and said adjustment amount detected by said third detection device ; and

25 a second calculation device that calculates the amount of high-frequency correction that is corrected by said high-frequency-correction device according to said detected

vehicle speed, said detected opened/closed status and said detected adjustment amount.

13. The sound-correction apparatus of claim 12  
5 comprising:

a memory device that stores said amount of low-frequency correction in correspondence to the ratio of said low-frequency component extracted by said extraction device, and said amount of adjustment detected by said third detection 10 device, and stores said amount of high-frequency correction in correspondence to said detected adjustment amount, said vehicle speed and said opened/closed status; and wherein

said low-frequency-correction device performs correction based on said amount of low-frequency correction 15 stored in said memory device , and

said high-frequency-correction device performs correction based on said amount of high-frequency correction stored in said memory device.

20 14. The sound-correction apparatus of claim 12 wherein  
said amount of low-frequency correction increases with respect to said adjustment amount detected by said third detection device according as the level of said low-frequency component extracted by said extraction device increases.

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15. The sound-correction apparatus of claim 12 wherein  
said amount of low-frequency correction is the amount

that the sound of frequencies below a specified frequency is corrected, and it increases according as the frequency is lower.

5        16. The sound-correction apparatus of claim 12 wherein said amount of high-frequency correction is the amount that the sound in the full range of the signal being reproduced is corrected, and it increases according as the frequency is higher.

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17. The sound-correction apparatus of claim 12 wherein said amount of high-frequency correction increases according as said vehicle speed increases.

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18. The sound-correction apparatus of claim 12 wherein when said opening/closing mechanism is opened, said amount of high-frequency correction increases with respect to said amount of high-frequency correction when said opening/closing mechanism is closed.

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19. The sound-correction apparatus of claim 12 wherein said amount of high-frequency correction decreases according as said adjustment amount detected by said third detection device increases.

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20. A sound-correction method for the audio apparatus installed in a vehicle having an adjustment process of

adjusting the sound volume of the full frequency range of the signal being reproduced, comprising:

an extraction process of extracting the low-frequency component below the audible frequency;

5 a first detection process of detecting the vehicle speed;

a second detection process of detecting the opened/closed status of an opening/closing mechanism in the vehicle;

a third detection process of detecting the adjustment amount by said adjustment process;

10 an acquisition process of acquiring the ratio of said low-frequency component extracted by said extraction process and said adjustment amount detected by said third detection process;

15 a first calculation process of calculating the low-frequency-correction characteristics according to the ratio calculated by said acquisition process;

a second calculation process of calculating the high-frequency-correction characteristics according to said adjustment amount, said vehicle speed and said opened/closed  
20 status;

a low-frequency-correction process of correcting the sound in the low-frequency range based on said low-frequency-correction characteristics calculated by said first calculation process; and

25 a high-frequency-correction process of correcting the sound in the high-frequency range based on said high-frequency-correction characteristics calculated by

said second calculation process.